

CLAIMS

The invention claimed is:

1. A method of coating a substrate with a metal layer, comprising the steps of:
applying a light-sensitive bonding material between said substrate and said metal layer under lighting conditions to prevent premature curing of said bonding material, thereby forming a metal-coated substrate;
drying said light-sensitive bonding material at a temperature compatible with said bonding material and under lighting conditions to prevent premature curing of said bonding material; and
exposing said metal-coated substrate to a light source having an intensity and for a period of time sufficient to cure at least portions of said light-sensitive bonding material.
2. The method of claim 1 wherein said light-sensitive bonding material includes a light-sensitive photopolymer film.
3. The method of claim 1 wherein the step of applying said light-sensitive bonding material between said substrate and said metal layer includes wetting a surface of said substrate, applying a light-sensitive photopolymer film to said surface of said substrate, wetting said photopolymer film, and applying said metal layer to said photopolymer film.
4. The method of claim 1 wherein said light-sensitive bonding material includes a light-sensitive emulsion in liquid form.
5. The method of claim 1 wherein the step of applying said light-sensitive bonding material between said substrate and said metal layer includes applying a substantially continuous layer of light-sensitive emulsion in liquid form to said substrate and applying said metal layer to said emulsion in liquid form.
6. The method of claim 1 wherein the step of applying said light-sensitive bonding material between said substrate and said metal layer includes selectively applying a substantially

continuous layer of light-sensitive emulsion in liquid form to said substrate in a predetermined pattern and applying said metal layer to said emulsion in liquid form.

7. The method of claim 6 further comprising the step of removing unadhered portions of said metal layer.

8. The method of claim 1 wherein the step of drying said light-sensitive bonding material includes allowing said light-sensitive bonding material to air dry.

9. The method of claim 1 wherein said light source is directed at said metal layer.

10. The method of claim 1 wherein said light source is directed at said substrate.

11. The method of claim 1 further comprising the steps of:
placing a mask over said metal-coated substrate before exposing said metal-coated substrate to said light source, wherein said mask has transparent and opaque regions in a pattern;
and
removing said bonding material and said metal layer from unexposed regions beneath said opaque regions of said mask.

12. The method of claim 1 wherein said metal layer is metal leaf.

13. The method of claim 1 wherein said metal layer includes a precious metal.

14. A metal-coated product made according to the process of claim 1.

15. A metal-coated article comprising:
at least a first substrate; and
a metal layer adhered to said substrate using a cured light-sensitive bonding material.

16. The metal-coated article of claim 15 wherein said metal layer forms a pattern on said substrate.

17. The metal-coated article of claim 15 wherein said metal layer includes a precious metal.

18. The metal-coated article of claim 15 wherein said substrate is selected from the group consisting of fabric, wood, leather, glass, plastic and sheet metal.

19. The metal-coated article of claim 15 further comprising:
a second substrate secured to said first substrate; and
an object positioned between said first and second substrates such that said first substrate and said metal layer adhered to said first substrate form a sloping flange around said object to hold said object to said second substrate.

20. A method of making a metal transfer sheet, comprising the steps of:
applying a thin layer of light-sensitive bonding material to a metal layer mounted on a release sheet under lighting conditions to prevent premature curing of said bonding material;
drying said bonding material under lighting conditions to prevent premature curing of said bonding material and at a temperature compatible with said bonding material to form said metal transfer sheet; and
packaging said metal transfer sheet in a light-tight container.

21. The method of claim 20 wherein the step of applying said light-sensitive bonding material to said metal layer includes applying a light-sensitive emulsion in liquid form to said metal layer.

22. The method of claim 20 wherein the step of drying said light-sensitive bonding material includes allowing said light-sensitive bonding material to air dry.

23. The method of claim 20 wherein said metal layer includes metal leaf.

24. A metal-coated transfer sheet made according to the process of claim 20.
25. A metal-coated transfer sheet comprising:
a metal layer; and
a coating of dried, non-cured light-sensitive emulsion on said metal layer.
26. The metal-coated transfer sheet of claim 25 wherein said metal layer includes a precious metal.
27. A method of coating a substrate with metal, comprising the steps of:
combining a metal material with a light-sensitive emulsion to form a metal coating paste;
preserving said metal coating paste under conditions to prevent premature curing of said emulsion;
applying said metal coating paste onto a substrate under lighting conditions to prevent premature curing of said emulsion;
drying said emulsion in said metal coating paste at a temperature compatible with said emulsion and under lighting conditions to prevent premature curing of said emulsion; and
exposing said metal-coated substrate to a light source having an intensity and for a period of time sufficient to cure said light-sensitive emulsion.
28. The method of claim 27 wherein the step of applying said metal coating paste includes forming said metal coating paste into a three-dimensional shape.
29. A method of preparing a metal coating paste, comprising the steps of:
combining metal material with a light-sensitive emulsion to form a metal coating paste;
and
storing said metal coating paste in a light-tight container to prevent premature curing of said emulsion.
30. A method of setting objects in a metal-coated substrate, comprising the steps of:
placing an object on a backing substrate;

placing a metal-coated substrate over said object, wherein said metal-coated substrate includes a metal layer adhered to a substrate layer using a cured light-sensitive bonding material;

securing said metal-coated substrate to said backing substrate around a perimeter of said metal-coated substrate, thereby trapping the object between the substrates;

conforming a shape of said metal-coated substrate to said object; and

cutting a portion of said metal-coated substrate away from a face of said object such that said metal-coated substrate forms a sloping flange around said object to secure said object to said backing substrate.